A BASELINE ASSESSMENT OF THE CONTRACEPTIVE LOGISTICS SYSTEM IN NIGERIA

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DELIVER

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Implemented by John Snow, Inc. (JSI), (contract no. HRN-C-00-00-00010-00), and subcontractors (Manoff Group, Program for Appropriate Technology in Health [PATH], Social Sectors Development Strategies, Inc., and Synaxis, Inc.), DELIVER strengthens the supply chains of health and family planning programs in developing countries to ensure the availability of critical health products for customers. DELIVER also provides technical management and analysis of USAID's central commodity management information system (NEWVERN).

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ACRONYMS

CDC	Centers for Disease Control and Prevention
CLMS	Contraceptive Logistics Management System
COC	combined oral contraceptive
DCDPA	Department of Community Development and Population Activities
DFID	Department for International Development
ECP	emergency contraceptive pill
FMOH	Federal Ministry of Health
FPLM	Family Planning Logistics Management
FP	family planning
HIV/AIDS	Human Immunodefiency Virus/Acquired Immune Deficiency Syndrome
LGA	Local Government Area
LIAT	Logistics Indicators Assessment Tool
LMIS	logistics management information system
LSAT	Logistics System Assessment Tool
NAFDAC	National Food and Drug Administration Control
NASCAP	National AIDS/STD Control Program
NISER	Nigerian Institute of Social and Economic Research
NGO	non-governmental organization
NPHCDA	National Primary Health Care Development Agency
PMS	patent medical store
PPFN	Planned Parenthood Federation of Nigeria
PSI	Population Services International
RH	reproductive health
RHCS	reproductive health commodity security
SDP	service delivery point
SFH	Society for Family Health/Population Services International
SMOH	State Ministry of Health
SPARHCS	Strategic Pathway for Reproductive Health Commodity Security
STI	sexually transmitted infections
TB	tuberculosis
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Attaining reproductive health commodity security—the guarantee that all people have continuous access to the quality products they need for family planning and reproductive health—is a growing challenge for developing nations. Countries not only need to secure financing for the expected increases in cost of supplies for rapidly growing populations, but must also maximize available resources by becoming more efficient at forecasting needs, conducting timely procurement, and delivering goods to consumers.

To build capacity for future contraceptive security in Nigeria, the Federal Ministry of Health has developed a Joint Action Plan for coordinating logistics and related activities among all national and international partners. Further, Nigeria has just launched the Strategic Pathway for Reproductive Health Commodity Security (SPARCHS), a country-driven, coordinated approach to RHCS though improved policy, logistics, finance, human and organizational capacity, demand creation and service delivery. Both initiatives aim to increase availability, quality and utilization of FP/RH services throughout the country.

The baseline logistics assessment carried out by DELIVER in June-July 2002 supports these initiatives by providing a comprehensive analysis of the Nigerian public sector family planning commodity logistics system. Two data collection tools were used to conduct the assessment: the qualitative Logistics System Assessment Tool (LSAT) and the facility based survey Logistics Indicators Assessment Tool (LIAT). The LSAT exercise helped participants understand the characteristics of the FMOH contraceptive logistics system, and results from the exercise are presented mainly in terms of strengths and weaknesses of the system. The LIAT, on the other hand, provided quantitative information on key logistics system performance indicators.

The LIAT was carried out in 25 warehouse facilities, 123 service delivery points and 142 private pharmacies/patent medical stores in seven states. The states were purposefully selected to include all six geopolitical zones and a variety of cultural and socioeconomic conditions as well as different levels of donor assistance.

Selected products included all contraceptives supplied through the FMOH system (including those that enter the supply chain via the social marketing program managed by the Society for Family Health), four STI drugs, and six tuberculosis drugs.

This report presents results from the assessment. The findings should contribute to stakeholders' efforts to improve logistics performance and develop a system that meets the needs of clients seeking FP/RH products from the public sector. Results should also serve as a baseline against which future progress can be measured. In particular, the assessment was designed to serve as the logistics baseline for the VISION project and to contribute to the SPARHCS process.

Summary of Findings and Recommendations

Nigeria's public sector contraceptive supply chain has a solid foundation upon which to build and improve. The main logistics strengths identified in the assessment include:

- existence of trained personnel, especially at higher levels;
- guidelines for logistics practices and responsibilities at all levels;
- existence of stock-keeping tally sheets and LMIS forms;
- established max/min levels that are printed on the LMIS forms;

- adequate storage practices at most sites;
- top-level FMOH commitment to improving the system; and
- increasing donor commitment and coordination.

To the extent possible, future design exercises and interventions should build on these existing strengths. Unfortunately, the system is not being fully implemented as designed, and product availability to clients has suffered as a result. Findings and recommendations (in italics) are summarized below. More detail is provided in Section 5 of the report.

Product Availability and Accessibility

1. **Most contraceptive brands are unavailable at public sector SDPs**. Among the 123 SDPs that provided FP services, no method was available in more than 50percent of SDPs, and only Depo-Provera was available in more than one-third of sites visited. Besides Depo-Provera, the most available method was Gold Circle condoms. Exluton (a progestin-only oral contraceptive for lactating mothers) and no-logo condoms were virtually unavailable anywhere. Postinor II emergency contraceptive pills and IUDs were in two-thirds of the facilities that manage these products. **In general, warehouses were more likely than SDPs to have contraceptives available**, despite the perception that most products are in short supply so warehouses distribute them as soon as they get them. The central and state warehouses were more likely to have products than the zones.

   Exluton and Postinor II fill important niches in the overall method mix, and efforts should be made to make them or equivalent products more available in order to meet the full range of client needs.

   In short, the results illustrate the maxim "no product → no program", so Nigeria should focus on improving product availability as a cornerstone of a viable FP/RH program.

2. **The private sector does not always fill the gap if public sector sites are stocked out**. Not surprisingly, private sites were more likely to have pills and condoms available, while public sites were more likely to have injectables and IUDs. Yet availability was not notably better in the private sector except for two brands: Gold Circle condoms (80% of private sites and 33% of public) and Duofem (46% private sites and 22% public).

   The FMOH should endeavor to ensure that all methods are made available in public SDPs, focusing on areas and clients with limited means to pay for private sector services.

3. **Contraceptive availability was lower in areas with the high unmet family planning need**, the Northwest and Northeast regions. This may be due to many reasons, including difficulties in delivering products the more remote areas, perceptions that family planning is "less demanded" there, provider bias against family planning, lack of trained personnel, lack of supervision, etc.

   In any case, the FMOH, should make special efforts to reach these areas, and the private sector may be less able to offer methods there given low income levels among potential users.

4. **Prices to clients are not always cheaper in the public sector**. Three of the most popular methods were cheaper to buy in private outlets than public SDPs.

   The wide range of prices for contraceptives in SDPs, with prices highest in the poorest areas, indicates a need to reassess the pricing strategies to ensure that products are affordable.

5. **Clinical methods often reach clients through inefficient channels**. Consumption data revealed that clients often bought contraceptives from the private sector and brought them to a public SDP for application (i.e. a client may bring in Depo-Provera, Noristerat, or an IUD to be administered at a public SDP). In other cases, the service providers purchased for their clients from the open market.

   Public sector sites are better equipped than pharmacies to provide clinical methods such as injectables and IUDs, so within the broader context of a market segmentation strategy, the FMOH should focus on clinical methods where it has a comparative advantage.

Logistics System Performance

1. **The LMIS system, though well designed, only functions in a small minority of sites**. Few SDPs keep stock records (24%), and only 22 percent of SDPs reported submitting LMIS reports for the most recent reporting period. Printed forms were often unavailable and not all personnel were trained to use them. Without good data on stock status, consumption and losses/adjustments, it is difficult to forecast and procure the right products, or to make sound decisions on product distribution.

   As such, putting in place a working LMIS system is one of the first tasks that the FMOH and partners should undertake.

2. **Limited LMIS data on consumption weakens forecasting and procurement.** Without accurate consumption data passed up through the system, it is difficult to make accurate forecasts. Likewise, without meaningful forecasts, it is unlikely that the right amount of good will be ordered, so procurement has also been affected.

3. **Expiration is no longer a major problem, at least temporarily.** Large quantities of expired contraceptives no longer exist at most warehouses and service delivery points, following government action after the DELIVER assessment in Feb 2001. Nevertheless, other problems such as transport; forecasting, procurement and distribution decisions not based on data; and lack of a redistribution policy; could potentially lead to recurrence of the problem.

4. **Most sites maintained satisfactory storage conditions, but improvements are still called for**. General storeroom conditions, failure to practice FEFO, and lack of space, were the most common weaknesses. Only 1 percent of all facilities met all 18 recommended storage conditions.

   These areas should be addressed to prevent future wastage of commodities.

5. **The lack of vehicles to distribute and/or pick-up commodities is a major obstacle at all levels of the system.** There is little understanding of how the system *should* work in terms of whether products should be picked up by lower levels or delivered from higher levels. Lack of transportation also hinders effective supervision and monitoring.

   Cost-efficient transportation options should be explored, and guidelines disseminated to all levels.The FMOH should decide whether it wants to manage a transport fleet or outsource, and if the former, at what level to keep the vehicles.

6. ***Personnel issues need to be addressed, including but not limited to training.*** The existence of trained logistics staff at the central and zonal levels is a key strength. On the other hand, many staff had not received training in many years (especially at lower levels). Also, many staff had not been paid regular salaries, sometimes for several months. This can have many adverse affects, including low morale, lack of interest in filling out stockcards and LMIS forms, lack of motivation for serving clients, and attrition. At a number of sites visited, staff were on strike due to non-payment of salaries.

Factors that Influence Logistics System Performance

The above issues are interrelated in complex ways, and determining how they interact to influence logistics performance (and subsequently product availability) is challenging. Among all of the inputs to logistics systems, three main categories stand out as essential inputs to any system: money, people, and policies. Certainly in the case of Nigeria, these are areas deserving priority attention, and making improvements in these areas will make technical assistance in logistics more effective.

1. **Lack of Finances**. This was cited as an obstacle to many aspects of logistics management, including training of staff, payment of salaries, printing and distribution of forms, supervision, monitoring, transport and distribution, and contraceptive procurement itself.

   The solution to this lies not only with increased donor support, but also with effective advocacy for increased budget allocations within the FMOH (and/or Ministry of Finance). A strong case should be made for the need for funds and the impact funding would have. A consistently applied strategy for cost recovery could also relieve the strain on government and donor budgets, but prices need to be appropriate and the policy needs to be consistently applied.

2. **Role of the Private and NGO Sectors.** Nigeria is fortunate to have a strong private sector, serving more than half of all users of modern contraceptives.

   A strategy of market segmentation with the private and NGO sectors could help the FMOH focus services on those clients most in need, relieve some of the burden on its constrained budget, and ultimately use limited resources more cost-effectively.

3. **Attrition of trained personnel since the mid-1990s.** This has led to fewer sites with adequate record keeping, fewer sites sending accurate LMIS reports, and ultimately, fewer sites receiving the right amounts of RH products.

   Training should certainly be undertaken where appropriate, but it will not solve all the logistics problems discussed in this report; it is one of many issues and needs to be undertaken in a coordinated way with other interventions.

4. **Communication issues.** At the central level, the CLMS structure and relationships between the multiple partners are complex and pose challenges to logistics management. In particular, the management of most of the supply chain by the DCDPA, while the NPHCA manages the zonal warehouses, creates inefficient communication flow that has hampered the flow of products from central level to the states. Decentralization down to the LGA level presents additional coordination and communication challenges.

   The DCDPA needs to work closely with the NPCHA, using the agency as a link to the lowest levels.

Additional Recommendations

- **Build on existing strengths**
  Wherever possible, new interventions should build on what exists. On the other hand, given the tremendous opportunity for high-impact improvements, the FMOH should undertake whatever course is most appropriate for long term RHCS, even if it means substantial changes in the existing system.

- **Consider undertaking a "root cause analysis" and prioritization exercise before or as part of the logistics design workshop**
  A logistics design workshop is an excellent next step for improving systems, but an analysis of the main causes of existing system weaknesses could help determine what to focus on and in which order. Along with a root cause analysis, an exercise to prioritize problems in terms of importance, urgency, cost, and feasibility, would help the FMOH focus on what is most important. If possible, both exercises should occur before or as part of the design workshop.

- **Re-establish a strategy for systematic supervision and monitoring**
  This was frequently mentioned as an activity that had "broken down" in recent years, especially at lower levels. Supervision and monitoring are key to service quality and effective logistics practices, such as record keeping and reporting. Resources should be sought or allocated to ensure a workable strategy.

- **Fix "easy" problems first, and fix related problems together**
  Before investing large amounts of resources in the truly challenging logistics problems, make sure small but important problems are addressed. A good example is LMIS. While it may indeed be necessary to train staff, LMIS reporting may not improve at all if other, simpler things such as printing and disseminating forms aren't corrected first. Of course, it is also true that making forms more available *without* training staff to use them is also ineffectual. Relations between problems need to be clearly understood, and related issues addressed together.

- **Use data to support the planning of activities and to advocate for resources**
  Data from this assessment, SPARHCS, and other studies provide useful information on areas for improvement and should be reviewed in advance of the upcoming design workshop. Data can also be effectively used for resource mobilization. Donors and other decision-makers are more likely to allocate funds if data clearly defines the scope of problems and shows how the problem would improve with effective use of additional resources.

- **Coordinate logistics interventions with service delivery activities**
  Facilities in some states reportedly discontinued FP services due to community resistance. Addressing this requires a coordinated effort to build community awareness on FP during the time or before logistics interventions are implemented. Other factors such as non-payment of salaries and lack of clinical and office equipment are other obstacles to quality services. While not strictly logistics issues, they have an impact on logistics, and they should be addressed together to make all interventions more effective.

- **Review procedures and guidelines for redistribution of overstocked supplies**
  When reviewing procedures for the inventory control system, the FMOH should consider guidelines on redistribution of overstocked supplies at the service delivery point level rather than the existing policy of redistribution at the state level.

- **Use alternative data sources to make logistics decisions at the central level**
  Until consumption data is collected through the LMIS, the FMOH could attempt to obtain service utilization data from the NHMIS, if available.

- **Reinforce communication and information exchange at the central and lower levels**
  DCDPA works with various departments at the central, zonal, state and local levels to ensure contraceptive availability. The department should strengthen communication with the NPHCDA that administers the zonal warehouses, and with logistics officers and technical staff working with state health officers. Communication and information systems should be revised so both parties could benefit from the information sent up the system. DCDPA needs to work closely with the Department of Finance and Supplies and other funding agencies to mobilize resources for facilitating distribution and for funding activities such as training, supervision and monitoring.

- **Come to agreement between DCDPA and NPHCDA on a coordinated information system**
  Both agencies use information systems with substantial overlap that may discourage service providers from filling them out them regularly. Stakeholders from DCDPA, NPHCDA, USAID, UNFPA, and VISION felt there should be a single unified *system* with as little duplication as possible.

- **Monitor progress at regular intervals and consider expanded logistics support if improvement is evident.** If the LMIS system becomes operational, it could be used for ongoing monitoring of product availability. If improvements are seen in areas with donor support, it would argue for increased support in the near term to improve the ability of the FP/RH program to meet clients needs. Such support could be linked to SPARCHS efforts to ensure that Nigeria would be able to obtain funds to maintain the logistics interventions in the future.

This set of recommendations is ambitious but should be feasible if the FMOH and other stakeholders continue their high level of effort commitment to RH commodity logistics. It is hoped that the findings and recommendations from this assessment will help Nigeria move rapidly and successfully down the pathway to RH commodity security.

1. Background

Nigeria is the largest country in Africa, with a population of 129.9 million[1]. Contraceptive prevalence is low even relative to other countries in Sub-Saharan Africa, with 9 percent of married women and 14 percent of men reporting using modern methods. There is a wide variation in modern contraceptive use by region, with the lowest (2 percent) in the Northwest region and the highest in the Southwest (16 percent)[2].

Family planning users obtain their methods from private and government sources in almost equal proportions. Overall, 43 percent of users reported getting supplies from the public sector, 43 percent from the private (medical) sector, and another 8 percent from other private sources including shops, friends, relatives, etc. Most users of IUDs (74%) and injectables (69%) get supplies from the public sector, while most users condoms (63%) and pills (52%), obtain their's from private sources. Those four methods account for 97 percent of modern contraceptive use.[3]

Nigeria's 1988 policy on Population for Development, Unity, Progress and Self-Reliance emphasized the importance of reproductive health as a priority in the country's efforts to achieve a sustainable balance between population growth and available resources. In 2001, the Federal Ministry of Health of Nigeria developed a National Reproductive Health Policy and Strategy as a commitment to implementing quality family planning programs as part of an integrated reproductive health approach consistent with the goals of the 1994 Cairo International Conference on Population and Development. This policy guides the current implementation of FP/RH programs in Nigeria.

The FMOH and other key stakeholders fully recognize the importance of effective logistics systems to successful FP/RH programs. Consequently, increased emphasis has been placed on building national capacity to ensure future reproductive health commodity security, including improved forecasting, procurement, and delivery of essential products to service delivery sites where clients need them. Recent efforts by the FMOH to move forward in these areas include the development a Joint Action Plan and initiation of the Strategic Pathway to Reproductive Health Commodity Security (SPARHCS). The Joint Action Plan was developed during the planning meeting held in October 2001. It is the guiding document that lays the groundwork for all stakeholders to coordinate efforts in working towards RHCS. The second initiative, SPARHCS, is a country-driven strategic process for countries to work toward RHCS by focusing on a coordinated approach to improving policy, logistics, finance, human and organizational capacity, demand creation and service delivery.

A key international stakeholder, USAID supports FP/RH activities as part of their Mission Strategic Objective 1: "To increase voluntary use of family planning, maternal and child health, child survival/sexually transmitted disease/HIV services and preventive measures with a supportive policy environment." As part of these activities, USAID requested DELIVER and CDC to conduct an initial assessment of the contraceptive commodity supply and the logistics management systems at the central level. The assessment, conducted in Feb/Mar. 2001, identified important weaknesses, including:

- Frequent stock-outs of all contraceptives, especially at SDPs;
- Warehouses crowded with expired contraceptives;
- Inefficient ditribution of small quantities of contraceptives due to low demand and useage;

[1] Population Reference Bureau. 2002. *World Population Data Sheet.*
[2] National Population Commission [Nigeria]. 2000. *Nigeria Demographic and Health Survey 1999*. Calverton, Maryland: National Population Commission and ORC/Macro.
[3] Ibid.

- Lack of transportation for supervision and other activities;
- Lack of trained personnel and equipment for IUD insertion; and
- Wide ranging contraceptive prices, often highest in the poorest areas.

Strengths were also identified through the assessment:

- Some personnel at the central and state level had been trained in logistics (many of them by the precursor project to DELIVER before 1994). Some staff at the lower levels also made efforts to maintain recording and reporting even though printed forms were lacking;
- Security was very good at warehouses and adequate storage conditions were maintained in many places;
- Some service providers had also found ways to overcome contraceptive shortages by using locally generated funds to buy products on the open market when they were unavailable through the government system;
- Some service providers were motivated enough to find transport on their own initiative to deliver LMIS forms and obtain contraceptives.

On the basis of these findings, DELIVER recommended a number of potential short and long-term interventions. The overall conclusion was that the design of the logistics system needed to be re-assessed, and revised as required, and that the nationwide LMIS needed to be 're-implemented' through a broad training program. The assessment also highlighted the issue of decentralization in Nigeria and its effect on the logistics system and the potential threat to contraceptive security.

Further discussions with USAID and national counterparts led DELIVER to develop a four-year plan of technical assistance activities to improve the performance of the logistics systems and to improve local personnel capacity in logistics management. The planned objectives and activities are intended to support the Joint Action Plan and the SPARHCS initiative.

2. Statement of Work

The baseline logistics system assessment supplements the initial DELIVER assessment, providing a more comprehensive picture of the contraceptive supply chain at all levels of the system. The assessment also looked at the availability of select drugs for treatment of sexually transmitted infections and tuberculosis.

The specific objectives of the assessment were to:

- assess the system performance of the public sector supply chain for contraceptives, select STI drugs and TB drugs;
- assess the availability of contraceptives in public and private service delivery points;

The information is intended to provide program planners with information to design/redesign interventions to improve the functioning of the overall system so as to ensure that every person is able to choose, obtain, and use quality contraceptives whenever he or she needs them. The data serves as a baseline for the logistics components of the VISION project, and satisfies the data requirements of the logistics management component of the SPARHCS. Other stakeholders such as UNFPA and DFID may

also be interested in additional analysis of the data from states where they have provided or will provide technical assistance in logistics. The data serve as a baseline for DELIVER and other stakeholders against which progress can measured through future assessments.

3. Assessment Methodology

Two data collection instruments were used for the assessment, including the:

1. Logistics System Assessment Tool (LSAT) used to gather qualitative information from key stakeholders, primarily at the central level; and

2. Logistics Indicator Assessment Tool (LIAT) used to gather quantitative information from warehouses and service delivery points (see Appendix A for tool).

The LSAT was carried out as a one-day workshop with 17 participants, including FMOH central and zonal-level personnel and key stakeholders from several other organizations involved in RH logistics (See Appendix C for list of participants). Additional qualitative information was collected through follow-up individual interviews.

The following topics were discussed to identify strengths and weaknesses in the system:

- Existence of a logistics system (unit and personnel)
- Flow of commodities in the supply chain
- Existence of a logistics management information system, description of the information flow and the extent to which logistics information is used for decision making
- Description of the forecasting and the procurement process and the extent to which logistics data is used to forecast order quantities
- Inventory control and warehousing and storage procedures and policies and whether they are generally followed at all levels of the system
- Capacity of transport and distribution systems
- Capacity of logistics personnel, including training and supervision
- Policies and communication.
- Finances for logistics

The LIAT, on the other hand, assessed system performance and indicators of contraceptive availability at the facility level. A shortened version of this tool was used to assess contraceptive availability at pharmacies and PMSs (Appendix B). The source of information/data, including position of person interviewed, was standardized as much as possible across all facility types. Interviews were held with logistics officers at warehouses, state FP coordinators in state stores and nurse and midwives at clinics/maternity home, dispensaries and health posts.

The LIAT provided information on the following indicators, among others:

- Availability of contraceptive methods on day of visit
- Stockout frequency and average duration of stockouts in last six months
- Percentage of facilities with personnel trained in logistics

- Percentage of facilities with stock cards available
- Accuracy of stock keeping records
- Percentage of facilities managing stock according to min/max levels
- Percentage of facilities adhering to good storage practices;
- Average price paid for contraceptive products (by facilities and clients)

Product availability was assessed by conducting a physical inventory; duration of stockouts by collecting information from either stock cards or interviewees; stock data quality by comparing stock cards to physical inventory and monthly/quarterly reports to stock cards; storage conditions by visually inspecting facilities; and other indicators through personal interviews.

The original sample for the LIAT included 364 facilities, including 49 public sector warehouses at various levels, 175 public sector SDPs of various types, and 175 private sector pharmacies and patent medical stores (PMS; small stores selling simple medical products). The sample included seven states—selected purposefully—out of the 36 in Nigeria, with at least one state from each of the six main geopolitical zones in the country. Bauchi, Enugu and Oyo were selected because the VISION Project is about to begin work there, and this assessment can serve as a logistics baseline for VISION in those states. The other four states were chosen to include a geographic and social/cultural cross-section of the country, as well as to ensure varying levels of donor assistance (see Table 1 below). Bauchi and Edo both receive support from UNFPA, while Benue receives support from DFID. Kwara and Sokoto were selected as "controls" as it was believed that they had received little or no donor assistance, at least in recent years.

Table 1. Selected states within the six geopolitical zones and donor support in each state

Zones	State	Donor support		
		DFID	UNFPA	USAID
South-East	Enugu			X
South-South	Edo		X	
South-West	Oyo			X
North-Central	Kwara*			
	Benue	X		
North-East	Bauchi		X	X
North-West	Sokoto*			

*No known donor support

Caution should be exercised in attempting to correlate results with donor assistance. In states where UNFPA and DFID work, for example, their assistance may not have reached the specific LGAs selected for this assessment. Those states may also have been selected because they needed greater assistance. As in the case of the VISION states, technical assistance has yet to begin, so the assessment can be considered a baseline.

In a few instances in the presentation of the results, the states are reorganized according to the 1999 DHS statistical regions: Edo and Oyo in the Southwest, Enugu in the Southeast, Bauchi in Northeast, Sokoto in Northwest, and Kwara and Benue in the Central region. This is so that certain variables can be compared with variables from the NDHS such as contraceptive prevalence and unmet need.

In each state, five local government areas (LGAs) were selected as follows. The LGA with the state capital was selected, and the four other LGAs were randomly selected from within geographic strata. These included one urban LGA, one semi-urban, and two rural LGAs (see Appendix D shows the list of LGAs in each state and zone). To select individual facilities, five public service delivery points (SDP) were randomly selected in each LGA from a list of facilities providing FP services obtained from the State Ministry of Health (SMOH). The facilities included hospitals, clinics/maternity centers, and dispensaries. From the private sector, 175 private pharmacies and patent medical stores (PMS) were selected during the field work on the basis of their proximity to public service delivery points: two sites closest to the last public SDP visited that day. All warehouses and stores were selected (one central warehouse, 6 zonal warehouses, 7 state stores, and 35 LGA stores—see Table 2).

Table 2 shows the total number of facilities in the original sample design, the number of facilities visited in the assessment, and the number ultimately included in the analysis.

Table 2. Number of facilities in original sample and in the assessment

Type of facilities	Number of facilities in original sample	Number of facilities visited in the assessment	Number of facilities included in the analysis	Percent of facilities included in the analysis
Central warehouse	1	1	1	100%
Zonal warehouses	6	6	6	100%
State stores	7	7	7	100%
LGA stores	35	35	11	32%
Public SDPs: hospitals, clinics/ maternity homes, dispensary, health posts	175	144	123	70%
Private pharmacies and patent medical stores	175	142	142	81%
Total	399	335	290	73%

The expected sample size was not reached for several reasons. Because many of the sites were remote and transport was difficult, it took longer to visit sites than expected. Gaining permission from State and LGA authorities also took more time than expected in some cases. Some of the private sites refused to participate (number unknown) due to the ongoing investigation by the National Food and Drug Agency for sites carrying non-registered products. For these reasons, it was only possible to physically reach 144 public SDPs and 142 private sitesof the original 399 during the three weeks available..

Among sites that were reached, most LGAs did not have functional stores, so only 11 were assessed. Likewise, 21 public SDPs that were visited could not be assessed, because 19 were not offering family planning, and 2 did not have personnel available to interview and to provide access to the storeroom and files. As such, the final sample included 25 public sector warehouses, 123 public sector SDPs, and 142 private SDPs (pharmacies and PMS).

Table 3 shows the facilities visited in each state, broken down by sector and type of facility.

Table 3. Number of facilities assessed in the public and private sectors by State and by type of facility

State	Public Sector sites							Private Sector Sites			Total All Sites
	Warehouses/Stores					Public Sector SDPs	Total Public Sites				
	Central	Zonal	State	LGA	Total WH/ Stores			Pharmacy	PMS	Total Private Sites	
Enugu		1	1		2	7	9	9	8	17	26
Edo		1	1	4	6	19	25	4	11	15	40
Oyo		1	1	3	5	20	25	6	20	26	51
Kwara			1		1	20	21	5	20	25	46
Benue			1	4	5	14	19	3	16	20*	39
Bauchi		1	1		2	25	27	2	12	14	41
Sokoto			1		1	18	19	2	23	25	44
Kaduna		1			1		1				1
Plateau		1			1		1				1
Lagos	1				1		1				1
TOTALS	1	6	7	11	25	123	148	31	110	142*	290

* An NGO clinic visited in Benue state is added to the total of private facilities

Data collection was carried out by seven two-person teams (one for each state) over a three-week period. Among the team members were six logistics officers from the FMOH, one official from NASCAP, a Monitoring and Evaluation officer from each state in the three VISION states, two zonal logistics officers from Edo and Plateau, and two researchers from the Nigeria Institute of Social Research. (See Appendix E for list of team members.)

Table 4 lists the 24 products covered in the assessment, including 11 contraceptive methods, 4 STI drugs and 6 TB drugs. The products were chosen because they are the main public sector contraceptives, although Gold Circle condoms enter the supply chain through the Society for Family Health, a social marketing program. The drugs were selected in discussions with DCDPA, based on the relation of STIs and TB to HIV/AIDs and the interest of the Ministry of Health in making treatment drugs more widely available.

Table 4. Products covered in the Logistics System Assessment

Contraceptives	STI Drugs	TB drugs
Oral contraceptives: Lo-femenal (COCs) Duofem Microgynon Exluton (POP) Injectables: Depo-Provera Noristerat Condoms: Gold circle and no logo Copper T 380A Postinor Vaginal foaming tablets	Ciproflaxin Erythromycin Benzathine Penicillin Doxycycline	Rifampacin Isoniazid Streptomycin Thiazine Pyrazinamide Ethambutol

Data were entered and analyzed by DELIVER staff using the Statistical Package for the Social Sciences (SPSS). The full data set will be made available for secondary analysis by interested stakeholders, subject to permission from the FMOH.

4. Results

The following considerations should be taken into account in the interpretation of the findings of the assessment.

- As mentioned above, the assessment teams were not able to visit all facilities in the original sample. Although all LGAs were visited, including the remote rural ones, it is still possible that remote SDPs were less likely to be visited than more accessible ones. Data on product availability may as a result overstate stock status.

- Also as mentioned above, 19 SDPs visited did not provide FP services, despite the fact that SMOH sources believed they did when approving the teams' schedules of visits. Reasons reported by staff for not providing FP services included lack of supply of contraceptives, lack of training (no personnel trained or service provider being transfered to another facility), lack of political commitment and support at the local government level, and community resistance against FP. Given that some sites cited chronic lack of supply of contraceptives as the reason, one could make the case that they should have been included in the analysis, yielding a sample size of 142. But the main objective of this assessment was to assess logistics system performance in making products available to clients, so it was decided to eliminate sites not providing FP from the analysis. Nevertheless, this means that from the clients' perspective, the percentage of sites with products available is actually lower than shown in these results.

- The chronic stockouts of contraceptives at many of the public SDPs meant that many sites considered that they 'did not manage' the selected products, even though they 'should have'. To standardize the analysis, and because the public facilities providing FP services should manage most contraceptives

(except for IUDs and possibly Postinor II ECPs), the denominator used for product availability in SDPs is the 123 facilities that reported they provide FP services. Because not all public facilities have the trained staff and/or equipment to provide IUD services, only the subset of facilities that reported they manage IUDs or Postinor II are used as the denominator in those cases. If 123 facilities were used as the denominator for those two methods, their availability would be much reduced.

- The team also found that the great majority of selected SDPs do not dispense STI or TB drugs, as all facilities were not comprehensive in their service provision. The amount of data therefore collected on these products was therefore much less than anticipated. In order to present data showing the effectiveness of logistics systems in making products available, results are based only on those sites offering those products. If product availability were calculated based on all sites, it would be much lower.

- Public SDPs are fairly well represented in the LIAT assessment. The private sector is only partially represented, however, by pharmacies and patent medical stores. There are many private/NGO clinics, providing FP services throughout the country. Given time and resource constraints, it was not possible to include a representative number of private sector clinics in the sample, so the decision was made to limit analysis of the private sector to a simple assessment of product availability in pharmacies and PMSs. These sites are major suppliers of contraceptives, particularly condoms and pills, some findings are useful in comparison with public sector findings. An assessment of private clinics, including NGOs, may be an interesting topic for future research. For the purpose of this report, "private sector" refers just to pharmacies and PMSs.

- Despite the large sample, even the data on public sector SDPs may not be representative of Nigeria as a whole due to the size and variability of the country.

The reader should be aware of these considerations when interpreting results in the report. If anything, most of the above comments suggest that results presented may overstate the extent to which products are currently available to clients in Nigeria.

4.1 FMOH Family Planning Logistics Management System: Organizational Structure and Supply Chain Description

Created in 1994, the National Contraceptives Logistics Management System (CLMS) guides logistics practices at all levels of the system. The CLMS is primarily a vertical system, managed at the central level by the Department of Community Development and Population Activities (DCDPA). The DCDPA works in conjunction with the National Primary Health Care Development Agency (NPHCDA) for distribution of contraceptives from the zonal warehouses. The latter is a parastatal agency under the Department of Health. The DCDPA also communicates and coordinates with other departments in the FMOH in dealing with different aspects of the logistics system, including the following, among others:

- staffing of logistics personnel with the Department of Personnel Management;

- budgeting for the logistics system with the Department of Finance and Supplies;

- monitoring up to the State level, the coordinating unit under the Department of Hospital Services;

- product quality assurance with National Agency for Food, Drugs Administration and Control under the Department of Food and Drug services.

These communication linkages are shown in the top part of Figure 1. Figure 1 also illustrates the flow of commodities and information. From the port of entry, contraceptives are moved to the central warehouse in Oshodi, Lagos. The central warehouse distributes contraceptives to the 6 zonal warehouses. At the zonal level, the commodities are stored in warehouses and zonal officers under the NPHCDA are responsible for daily logistics tasks.

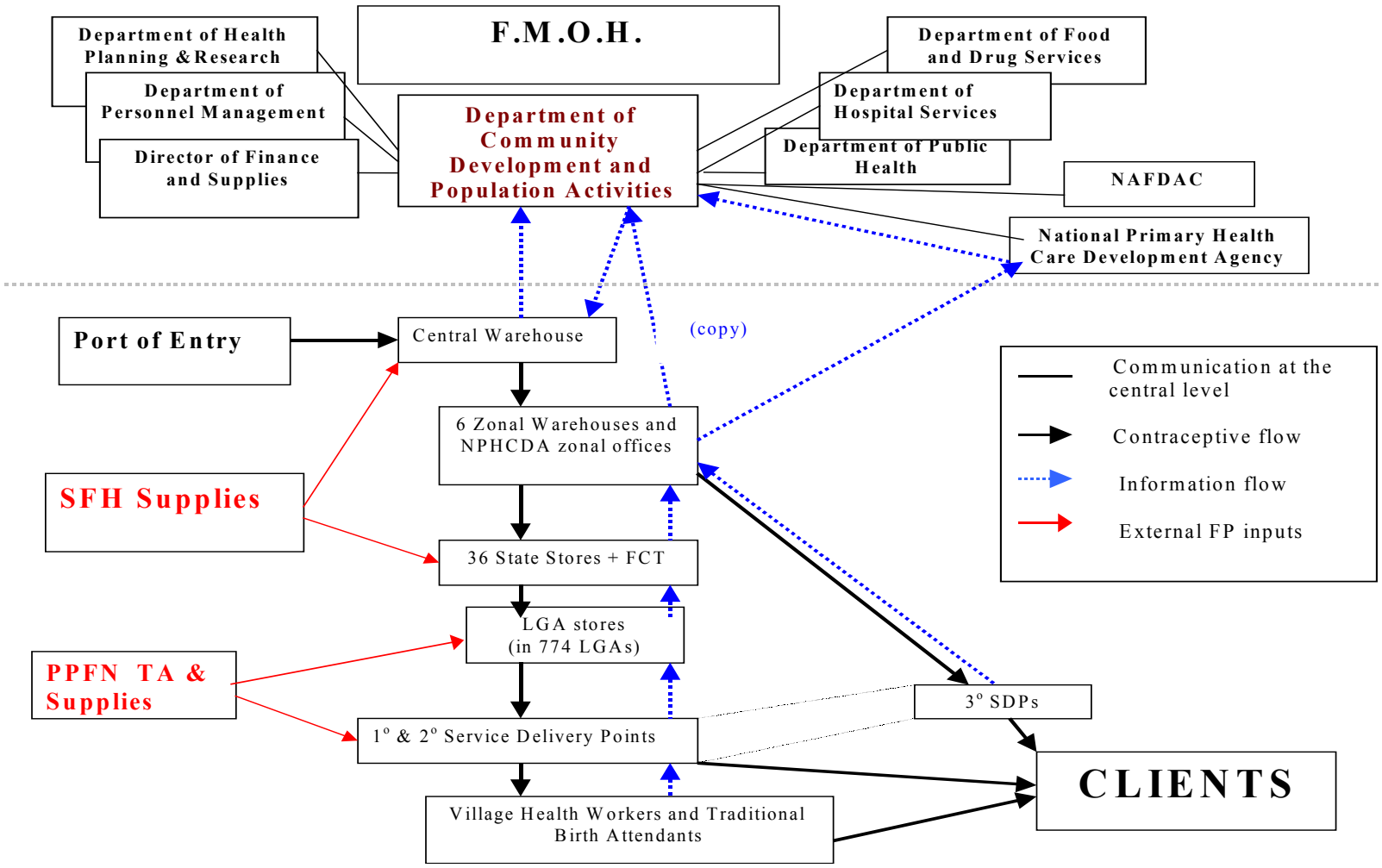
The zonal warehouses in turn issue the contraceptives to the state stores (in the 36 states and the Federal Capital Territory), that are managed under the State Ministry of Health/ Department Primary Health Care and Control, in each state. The zonal warehouses also distribute products to teaching hospitals, and federal medical centers. State stores distribute contraceptives to LGA stores that are under the mandate of the Local Government Administration under the State Department of Primary Health Care (MCH/FP Unit), and those in turn distribute to State general hospitals, specialist hospitals and other SDPs. In states without LGA stores, SDPs get supplies directly from the state stores. Once contraceptives reach service delivery points (clinics, maternity homes, dispensaries and health posts), in some cases they are distributed to village health workers and traditional birth attendants.

While contraceptives flow down the system to warehouses/stores, service delivery points and clients, information is collected and sent up from the service delivery points to LGA stores, to states stores and to NPHCDA zonal offices. Most reports are supposed to be submitted every month; a few are submitted quarterly. From the zonal offices, information is sent to the NPHCDA headquarters, with a copy to DCDPA. NPHCDA also sends a copy to DCDPA. DCDPA in turn sends the information back down to the central warehouse.

On occasions, the central warehouse and state stores purchase contraceptives (mainly Duofem and Gold circle condoms) from the Society for Family Health/Population Services International (PSI), while LGA stores and service delivery points receive contraceptives from Planned Parenthood Federation of Nigeria (PPFN). Both SFH and PPFN have separate supply chains that intersect with the FMOH supply chain in the ways mentioned, and which should be considered for a complete picture of RH supply in Nigeria.

As described earlier, logistics management is divided within many levels and departments, which makes coordination and information flow challenging. Coordination of logistics responsibilities between the many parties currently takes place through departmental meetings, joint workplans and stakeholders' meetings. This creates several challenges to effective communication and decision-making. At higher levels of the system, the separate management of the zonal warehouses by NPHCDA, and the irregular information flow that occurs as a result, creates potential communication and technical challenges to effective supply chain management. At lower levels a lack of funds for regular supervision and monitoring has led to a widespread feeling that communication has broken down at those levels as well. These are fundamental issues that the FMOH should address in order to optimaize the impact of other logistics interventions.

Figure 1: FMOH FP Communication, Commodity and Information Flow



4.2 Contraceptive Availability and Accessibility

The ultimate goal of implementing a logistics system is to ensure commodity availability at the service delivery points. Of the 142 public sector service delivery points visited with available staff, only 123 (87%) stated that they currently provide family planning services. All 21 hospitals surveyed provide family planning services, 93 of the 102 (87%) clinics/maternity homes, 8 of the 15 (53%) of dispensaries, and the one health post surveyed also provided services. This pattern suggests that smaller facilities closer to their communities are the least likely to offer FP services.

Table 5 shows the availability of individual contraceptive products in stock on the day of the visit in warehouses, public SDPs that provide FP services, and private sector outlets. The most frequently stocked methods in public sector warehouses were Gold Circle condoms, followed by IUDs and Depo-Provera.

In the total 123 sites that provide FP services, Depo-Provera (42%) and Gold Circle condoms (33%) were the most widely available methods. Postinor II and IUDs were in stock in two-thirds of the smaller percentage of SDPs that reported they manage the products (55 sites managed IUDs and 23 sites managed Postinor II).[4] Two products (Exluton and condoms with no logo) were virtually unavailable at this time.

In general, product availability is inadequate. No products were available in even half of all sites, and only Depo-Provera was available in more than one-third. If all 123 SDPs are included, only 28 percent had IUDs available and only 13 percent had Postinor II. Further, if product availability were calculated for all 142 sites visited (ie those that should be providing FP services), it would be about 13 percent less than shown here. It should also be noted that these data present an incomplete picture, as they do not describe how much stock is available on average (presented in detail in the inventory control section).

[4] Not all facilities in public sector have the capacity to manage IUD and maybe Postinor (due to lack of training), so limiting the analysis to only those sites managing the products tells how well the *supply chain* gets them to those sites. But from the clients' perspective, IUDs and Postinor II are only available in a very small percentage of sites.

Table 5. Availability of contraceptive methods on day of visit (based on physical inventory)

Contraceptives	Percentage of facilities with product in stock		
	Warehouses (n=25)	Public SDPs (n=123 except where shown**)	Pharmacies/PMSs (n=142 except where shown**)
Lo-Femenal	20	17	23
Duofem	48	22	46
Microgynon	44	15	18
Exluton	0	1	0
Depo-Provera	56	41	30
Noristerat	4	19	25
No logo condoms /Other brands*	4	2	3
Gold circle condoms	60	33	80
VFT/Neosampoon	4	4	5
CuT380 **	60	61	57
Postinor II **	36	65	78

*Other brands only found in private sites.
** The denominator used for IUDs and Postinor II in public SDPs is the number of SDPs that reported managing those products, with n=55 for CuT380 and n=23. For private sites, the number of sites carrying the 2 products was 14 for Cu T380 and 36 for Postinor.

In tables 6 and 7, contraceptive availability is further broken by type of facility in each state. Table 6 shows product availability at warehouses and stores, by method and by state. Since the number of sites is small, absolute numbers are shown instead of percentages. The three combined oral contraceptives (COCs) are combined in a single column, as are all condom brands. In general, state stores were most likely to have contraceptives available, followed by zonal warehouses. The zonal warehouses in Bauchi, Sokoto, and Kaduna were completely stocked out of all methods, while those in Enugu, Edo, and Oyo were fairly well stocked. LGA stores, where they existed, were not well stocked, except in Oyo.

COCs, condoms, injectables, and IUDs were all available in just over half of all warehouses. The condoms were almost exclusively Gold Circle brand from the SFH social marketing program, however, while injectables were almost exclusively Depo-Provera. Exluton and no-logo condoms were not found in any warehouses, and Noristerat was only found in one LGA store (Edo)

The far right column shows the average number of methods available for each type of warehouse. Overall, six of the total 25 warehouse/storeage sites had all five method types in stock on the day of the visit. Most LGA stores had only one or two methos available.

Table 6. Availability of contraceptive products in warehouses and stores by state on the day of visit (based on physical inventory)

State	Type of site	No. of facilities	Number of facilities with product in stock							Average No. of method types in stock of total 5 method types*
			COCs	Exluton	Depo-Provera	Noristerat	Condoms	IUDs	Postinor	
Enugu	Zonal warehouse	1	1	0	0	0	1	1	1	4
	State store	1	1	0	1	0	1	1	1	5
Edo	Zonal warehouse	1	1	0	0	0	1	1	0	3
	State store	1	1	0	0	0	1	1	0	3
	LGA stores	4	1	0	1	1	0	0	2	1
Oyo	Zonal warehouse	1	1	0	1	0	1	1	0	4
	State store	1	1	0	1	0	1	1	1	5
	LGA stores	3	1	0	2	0	2	2	1	2.7
Kwara	State store	1	1	0	0	0	1	1	1	4
Benue	State store	1	1	0	1	0	1	1	0	4
	LGA stores	4	2	0	2	0	2	0	0	1.5
Bauchi	Zonal warehouse	1	0	0	0	0	0	0	0	0
	State store	1	1	0	1	0	1	1	1	5
Sokoto	State store	1	1	0	1	0	1	1	1	5
Plateau	Zonal warehouse	1	1	0	1	0	1	1	1	5
Kaduna	Zonal warehouse	1	0	0	0	0	0	0	0	0
Lagos	Central warehouse	1	1	0	1	0	1	1	1	5
Total		**25**	**16**	**0**	**13**	**1**	**16**	**14**	**11**	**3**

*Out of 5 method types: pills (Lo-feminal, Mycrogynon, Duofem, and Exluton), injectables (Depo-Provera and Noristerat), condoms (Gold Circle and no-logo), IUDs (CuT380A), and ECPs (Postinor II).

Table 7. Availability of contraceptive products in SDPs and pharmacies/PMS by state on day of visit (based on physical inventory)

State	Type of site	Number of facilities, by state	Percent of facilities with contraceptive in stock, among all facilities providing family planning services					Number of facilities managing Postinor II	Percent of facilities w/ contraceptives in stock, among those managing Postinor	Number of facilities managing IUDs	Percent of facilities w/ contraceptives in stock, among those managing IUDs
			COCs	Exluton	Depo-Provera	Noristerat	Condoms				
Enugu	SDPs	7	29	33	71	0	71	2	100	6	67
	Pharmacies/ PMSs	17	59	0	47	24	88	5	60	3	33
Edo	SDPs	19	58	0	47	58	37	2	100	7	57
	Pharmacies/ PMSs	15	53	0	20	20	87	4	100	1	100
Oyo	SDPs	20	70	0	65	15	70	11	55	15	93
	Pharmacies/ PMSs	26	62	0	15	12	92	14	57	6	67
Kwara	SDPs	20	40	0	25	5	10	5	100	16	56
	Phamacies/ PMSs	25	84	0	16	12	92	9	78	3	33
Benue	SDPs	14	7	0	50	7	21	1	0	6	33
	Pharmacies/ PMSs	20	45	0	20	20	70	5	100	0	0
Bauchi	SDPs	25	44	0	32	16	20	3	0	3	33
	Pharmacies/ PMSs	14	64	0	21	43	93	1	0	3	0
Sokoto	SDPs	18	22	0	28	22	22	0	0	2	50
	Pharmacies/ PMSs	25	76	0	28	24	56	2	50	2	50
Total SDPs		**123**	**40**	**1**	**42**	**19**	**33**	**23**	**65**	**55**	**64**
Total Pharmacies/PMSs		**142**	**65**	**0**	**23**	**20**	**82**	**40**	**70**	**18**	**44**

Table 7 shows the same type of breakdown for SDPs, both public and private. Availability at the SDP level also varied by method and by state. For example, the majority of SDPs (50% or more) in Enugu, Edo, Oyo and Benue had injectables available, while in the remaining states the figure was 30 – 40 percent. As with warehouses, no-logo condoms were not found in any sites, and Exluton was only found in one site in Enugu. Nineteen percent of sites had Noristerat, though many more (42%) had Depo-Provera.

In private sector outlets, COCs (especially Duofem) were found in a majority of sites in all states except Benue (45% of sites). Gold circle condoms were found in over 87 percent of private sites in all states except Benue (70%) and Skoto (56%). Fewer private sector sites had injectables in stock. Only in Enugu (53%) and Bauchi (50%) did a majority of sites have the product. Interestingly, the percentage of sites with Depo-Provera (23%) was similar to the percentage with Noristerat (20%) in private sites. The percentage of private sector sites with Postinor II (70%) and IUDs (44%) appears fairly high, but as with public SDPs, the number of facilities "managing" those products is small, so the percentage of all private sites with these methods available is smaller than shown in the tables.

Comparing Tables 6 and 7, Duofem, Microgynon, and Gold Circle condoms were much more available in the warehouses than they were in service delivery sites. Noristerat was only found in one of the 25 warehouses visited, although some SDPs and private outlets did have some in stock. These methods are understocked or stocked out in the large majority of public SDPs. Lack of availability of these important methods surely contributes to unmet need among potential clients of those methods.

When the logistics system fails to deliver products to SDPs in the supply chain, some facilities have taken the initiative to obtain contraceptives from other sources than the FMOH (see table 8). In particular methods such as injectables (Noristerat and Depo-Provera) and Lo-femenal, were purchased either from the open market, wholesalers or pharmacies by over 45 percent of sites reporting. While there is nothing necessarily wrong with this practice as it shows initiative on the part of the SDPs, it is an inefficient means of obtaining products and likely diverts resources that could be better used serving customers.

Table 8. Facilities getting contraceptive methods from the open market/wholesalers/pharmacy

Contraceptives	Facilites that reported source of contraceptives	Percentage of facilities that get contraceptives from open market/wholesellers/pharmacy
Lo-femenal	72	47
Duofem	39	36
Microgynon	38	26
Exluton	21	19
Depo-Provera	67	45
Gold circle condom	50	36
VFT/Neosampoon	32	22
CuT380	43	26
Noristerat	64	50
Postinor II	17	6

Table 9 shows the duration of stockouts for each contraceptive method, among sites reporting stockouts in the last six months. Realtive to other products, a smaller number of warehouses reported stockout in the last 6 months for Duofem, Depo, Gold circle condoms and IUDs. The remaining products were stocked out in the majority of the warehouses for approximately the entire 6 months. While in SDPs, except for IUDs, all other products were stocked out in the majority of the facilities and for an average of most of the 6 months prior to the assessment.

The severity of stockouts may be underestimated, as information was only collected for the most recent 6 months, but many stockouts had lasted over a year. Some facilities that have been stocked out of a method for a long period of time reported that they don't manage that product.

Table 9. Average duration of stockouts (in days) during the last six months

Contraceptives	Among facilities reporting stockouts in the last 6 months			
	Percentage of warehouses/stores	Average number of days of stockouts	Percentage of SDPs	Average number of days of stockouts
Lo-femenal	56	145	88	166
Duofem	48	180	82	167
Microgynon	52	120	89	180
Exluton	100	180	100	180
Depo-Provera	48	144	60	162
Noristerat	96	150	86	166
Gold circle condom	36	180	72	80
No Logo condom	96	150	100	169
CuT380*	44	120	44	180
Postinor II*	64	132	70	177

*CuT380 and Postinor stockout analysis was done out of the SDPs that reported managing these products.

The majority of SDPs gave a shortage of supply from the higher level as the reason for stockout in the last 6 months (see figure 2 below). Approximately 10 percent said they did not go to pick up supplies, 2 percent said they requested the wrong amount, and 19 percent gave other reasons.

Figure 2. Percentage of facilities that reported reasons for stockout in the last 6 months

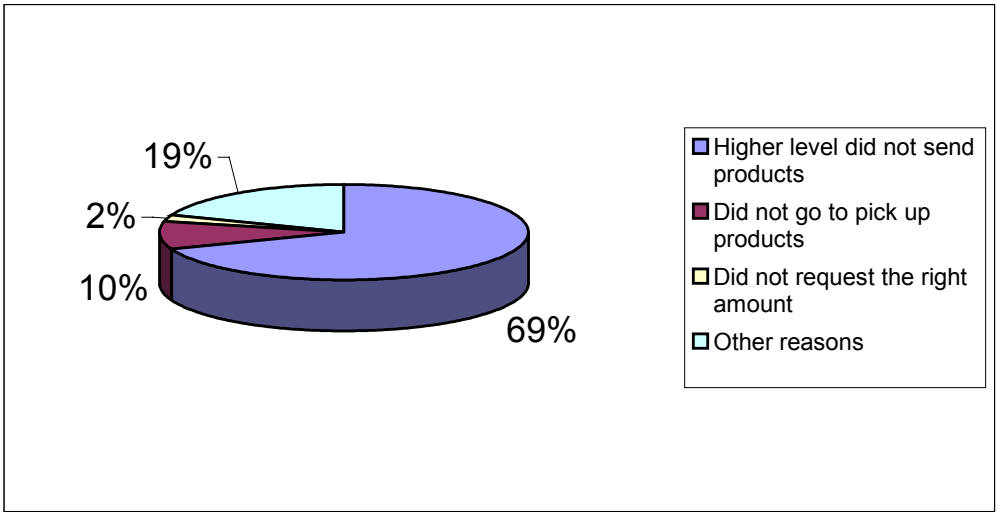
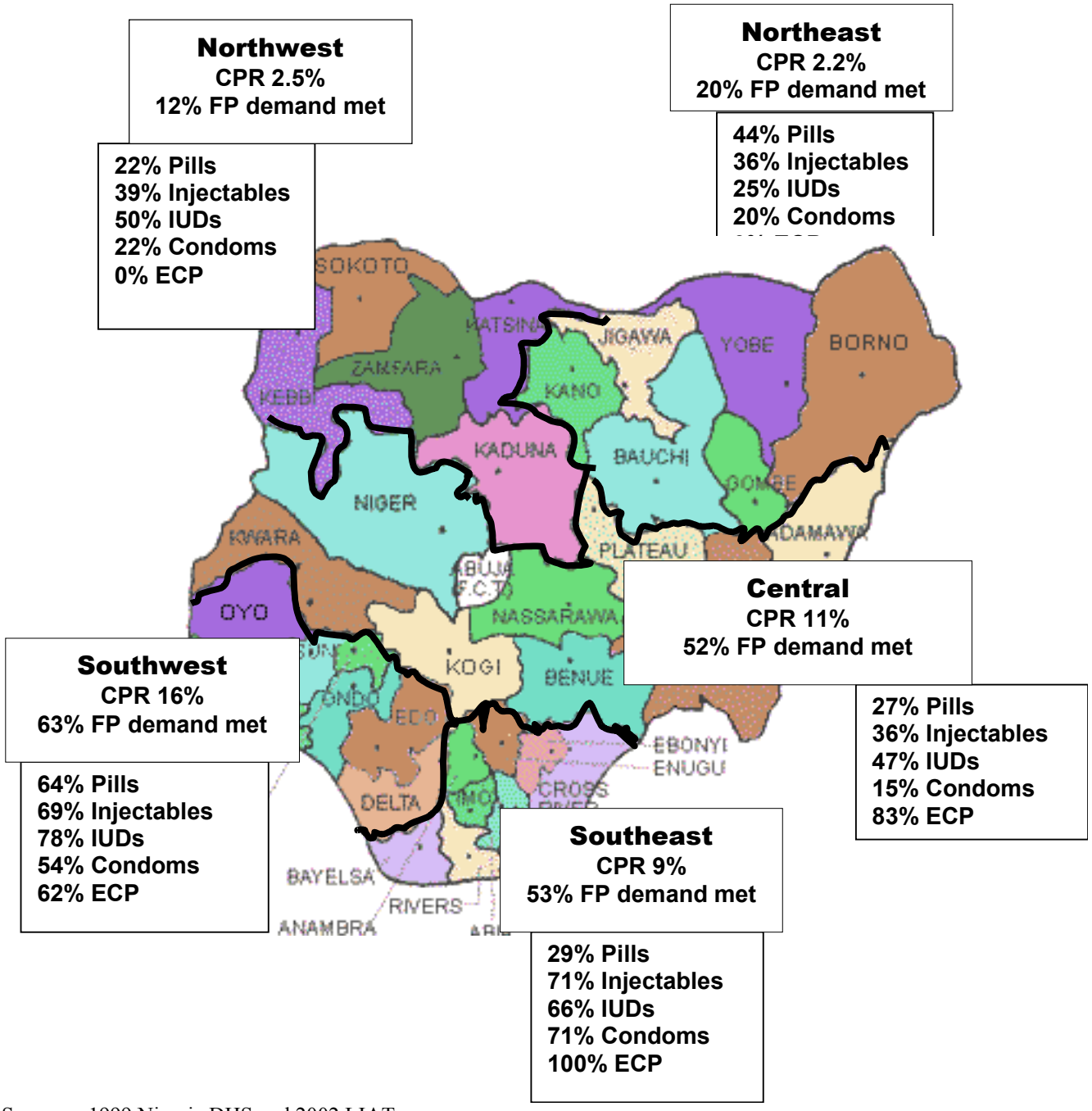


Figure 3. Contraceptive Use/Demand and Method Availability

Percent of surveyed public facilities with produts in stock on day of visit



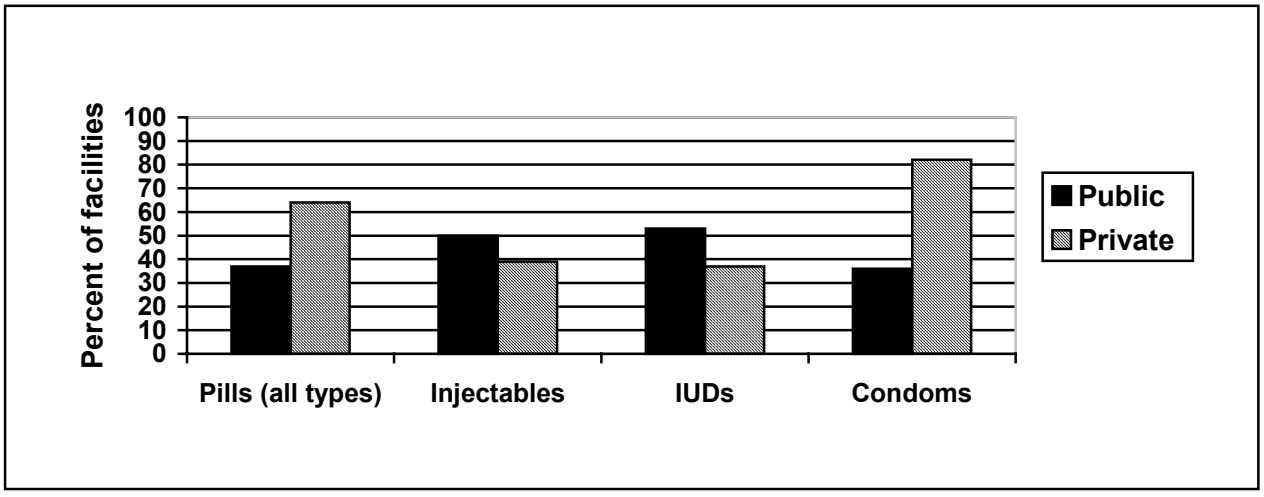
Sources: 1999 Nigeria DHS and 2002 LIAT

Figure 3 presents the LIAT data on contraceptive availability along with contraceptive prevalence rates and percent of FP demand satisfied, from the 1999 Nigeria DHS. Overall, the greatest lack of methods are seen in the two northern regions, where current use is lowest. The central region, with Kwara and Benue states, also had low product availability for all methods except ECPs (Postinor). CPR is highest and contraceptives are most readily available in the Southwest, followed by the Southeast. While this is only a partial picture of total contraceptive availability (there are private and NGO clinics throughout the country), it is of concern in regions, and for methods, where the public sector is the primary source of service.

Figure 4 summarizes and compares the product availability of the four main types of contraceptives by sector. On the day of the assessment visit, more public SDPs had injectables and IUDs in stock than private sector outlets, while condoms and oral contraceptives were more likely to be found in private outlets. This pattern is not surprising given that injectables and IUDs are "clinic based" methods and public sector facilities are the main source of supply for these two methods (1999 NDHS). It is essential, however, to ensure that public sector facilities are well stocked with all methods, even if it means carrying smaller quantities of pills and condoms.

These data do not answer the question of *why* some products are more available than others, in different states and different regions. Lack of availability can be due to many factors, some of which are beyond the control of the logistics system. Some facilities may not request products because they don't think clients demand them, while others may have given up requesting because requests haven't resulted in products being delivered for extended periods. Determining the causes can be helpful in identifying the most appropriate solutions, and some analysis of factors affecting product availability should be undertaken before undertaking new large-scale interventions.

Figure 4. Contraceptive availability in public and private sector outlets on the day of visit



4.3 STI and TB drug availability

The results for STI and TB drug availability are presented separately due to the small number of facilities that could be assessed. STI and TB drugs were usually found in hospital pharmacies, with few primary level SDPs carrying them. This in itself is an important finding. While it is not surprising that TB drugs are found mainly in hospitals, one might expect, more sites to offer STI drugs, given efforts by Nigeria to move toward an integrated RH approach. Table 9 shows that the majority (about 80-90 percent) of private outlets had all four STI drugs in stock, among those sites that normally manage the products. Ciproflaxin was the most widely available, and Benzathine penicillin was the least available. Thus, most private facilities appear to be able to obtain STI drugs when they need them, but fewer than half of sites that a client might visit had them available. Only in the case of Erythromycin did more than half of facilities say they managed the product.

The number of public sites managing STI drugs was smaller than in the private sector, as were the percentages of those sites with products available. Ciproflaxin was available in the highest percentage of sites, while Benzathine penicillin was found in only 38 percent of SDPs managing it (2 percent of all SDPs).

Table 10. STI drug availability on the day of the visit at public SDPs and private PMS/Pharmacies

STI drugs	Public Sector		Private Sector	
	Number of facilities managing the product	Percentage of SDPs with product in stock (among those that manage)	Number of facilities managing the product	Percentage of sites with product in stock (among those that manage)
Ciproflaxin	15	67	56	89
Erythromycin	12	58	72	81
Benzathine Penicillin	8	38	47	79
Doxycycline	10	50	61	85

Fewer of the facilities visited carried TB drugs because the drugs are mostly found in specialist hospitals and clinics. Only public SDPs are included, as private outlets do not manage these drugs. The percentage of sites with products available ranges from 33 to 80 percent, indicating fairly good availability among sites that manage the product, but one must remember that only 3-5 sites out of 123 sampled offer these products. It is also important to point out that the consequences of stockouts in the case of TB drugs can be extremely serious, so even small levels of stockouts in sites carrying these products is a cause for concern.

Table 11. TB drug availability on the day of the visit at public service delivery points

TB drugs	Number of facilities that manage the drug	Percentage of facilities with drug in stock (among those that manage it)
Rifampacin	4	50
Isoniazid	5	60
Streptomycin	5	80
Thiazine	3	33
Pyrazinamide	4	50
Ethambutol	4	80

4.4 Logistics System Performance

Lack of product availability can be due to many factors, including changes in demand and other issues beyond the control of logistics. The logistics system itself, however, plays a major role in whether products reach the service sites where clients can access them. In this assessment we analyzed the characteristics of the supply chain to see which components were working well or not, thereby capturing as much as possible of the logistics impact on product availability. These components include LMIS, forecasting, procurement, inventory control, transport, storage, LMIS, personnel and organizational support, and finances, among others. Key findings are described in the following sections.

4.4.1 Logistics Management Information System (LMIS)

Information lies at the heart of any logistics system, and a good LMIS system is essential for many other components to function well. Hence, the effectiveness of the LMIS system in the FMOH contraceptive supply chain deserves special attention.

Guidelines for the LMIS exist for recording and reporting consumption, for recording transactions, calculating months of stock on hand, and requesting and sending contraceptive supplies. LMIS forms were revised recently with donor support and participation, mainly UNFPA. The forms were intended to be distributed and used throughout the system, but this assessment indicated that different versions of the forms are being used in different states, with the new forms mainly used in UNFPA-assisted LGAs.

Forms and reports that should be in use are:

- Form3 or Form 3A: State/LGA summary report of Family planning Activities.
- Form 4 or Form 4A: Health facility /LGA Contraceptive Request/Receipt Form (used within the State by health facilities and LGAs)
- Form 5A: State Contraceptive Commodity Request/Receipt Form
- Form 6A: Zonal Contraceptive Commodity Request/Receipt Form
- 4 HF-1: Daily Register of Family Planning in the Health Facility
- 4 LG-1: Monthly Report of Family Planning in the LGA

- 4 ST-1: Monthly Report of Family Planning in the State
- 4 HF-2: Monthly Report of Family Planning in the Health Facility

The new versions of the forms are those with a suffix A in the list above. Tally sheets (simplified stock cards) are also available and are supposed to be used to manage contraceptives at all levels of the system.

Less than a quarter of SDPs and only two-thirds of all warehouses were currently using stock cards or tally sheets. Among those that had stockcards or tally sheets, information on stock level on the day of the visit was compared to physical inventory. It was found that most warehouses had stock cards for at least one method, but few were accurate for even one method. Only 4 warehouses and no SDPs had accurate information on stockcards for all products. It should be noted that accuracy is rather stringent because the stock on hand on the cards has to match exactly the count of physical inventory for each product to be considered accurate. Even so, LMIS data accuracy is crucial to a quality logistics system, and it begins with stockcard accuracy. This is an area the FMOH should focus on with much opportunity for improvement.

Table 12. Stockcard availability and information accuracy on stockcard (%)

Type of facility	Number of facilities	Percentage of facilities		
		With stockcard for at least one product	With accurate information on stockcard for at least one product, among facilities that had a stockcard	With accurate information on stockcard for all products, among facilities that had a stockcard
Warehouse	25	60	13	6
SDP	122	24	21	0

Only 12 out of 25 warehouses/stores and 62 out of 123 SDPs reported passing stock information up the system using LMIS forms, and only 36 percent of warehouses/stores and 22 percent of SDPs reported sending LMIS reports in the most recent reporting period (usually meaning the last month). Given these low reporting rates, it is difficult for higher levels to calculate stock needs and to order and deliver correct amounts to SDPs.

During the LSAT discussion, lack of resources was identified as a major reason for inadequate monitoring and supervision on reporting (see box below), which in turn contributed to low and inaccurate reporting. Insufficient staff development and training were also cited as contributing factors to unsatisfactory reporting prctices.

Box 1. LSAT Workshop Analysis: Logistics Management Information System (LMIS)

Strengths	Weaknesses
♦ System should work in theory ♦ Guidelines exist ♦ Forms could work with some revisions ♦ Increasing government commitment to LMIS, information in general ♦ Donor participation and collaboration	♦ In reality, the system has broken down ♦ Inadequate funds for monitoring, supervision, and training ♦ Poor record keeping, especially at lower levels ♦ Poor feedback mechanism ♦ LMIS forms need some revision

4.4.2 Forecasting and Procurement

Forecasting has been hampered by lack of a systematic approach. The main obstacle at present is poor information on consumption (see comments on LMIS below). Forecasts are developed using demographic data. Without consumption data passed up through the system, it is difficult to make accurate forecasts.

Although the budget has been insufficient in the past years, forecasting is reviewed every year with reference to the budget.

There is no focal person for both forecasting and procurement. Procurement as well as forecasting is the responsibility of a committee. UNFPA is the procurement agent for DCDPA. As for forecasting, procurement has not been systematic due to funding shortfalls. In procuring contraceptives, quality assurance is done by the National Food and Drug Administration Control.

4.4.3 Inventory Control for Contraceptives

The inventory control system enables staff at warehouses and stores to know when to order, how much to order and how to maintain an appropriate stock level (between established min and max levels) to avoid shortages and oversupply. Policies on inventory control procedures exist. Both the minimum and maximum levels of stock on hand and the ordering system for each level in the system have been established (see Figure 5). These levels are printed on the LMIS forms.

Figure 5 also shows where the pull (ordering from below) and push mechanism is supposed to operate and the maximum/minimum stock levels to be maintained at each level. The maximum for the central warehouse is not established because the supply level has varied throughout the years and it is questionable, even if there was a maximum level established, whether the level of stock at the central warehouse would ever be reached. This leads to a point made during the LSAT discussion that the system has never operated under full supply and it is unknown how all components of the logistics system would handle if the supply chain were ever filled to capacity.

Figure 5. Min/Max levels and ordering system for each level of the logistic system

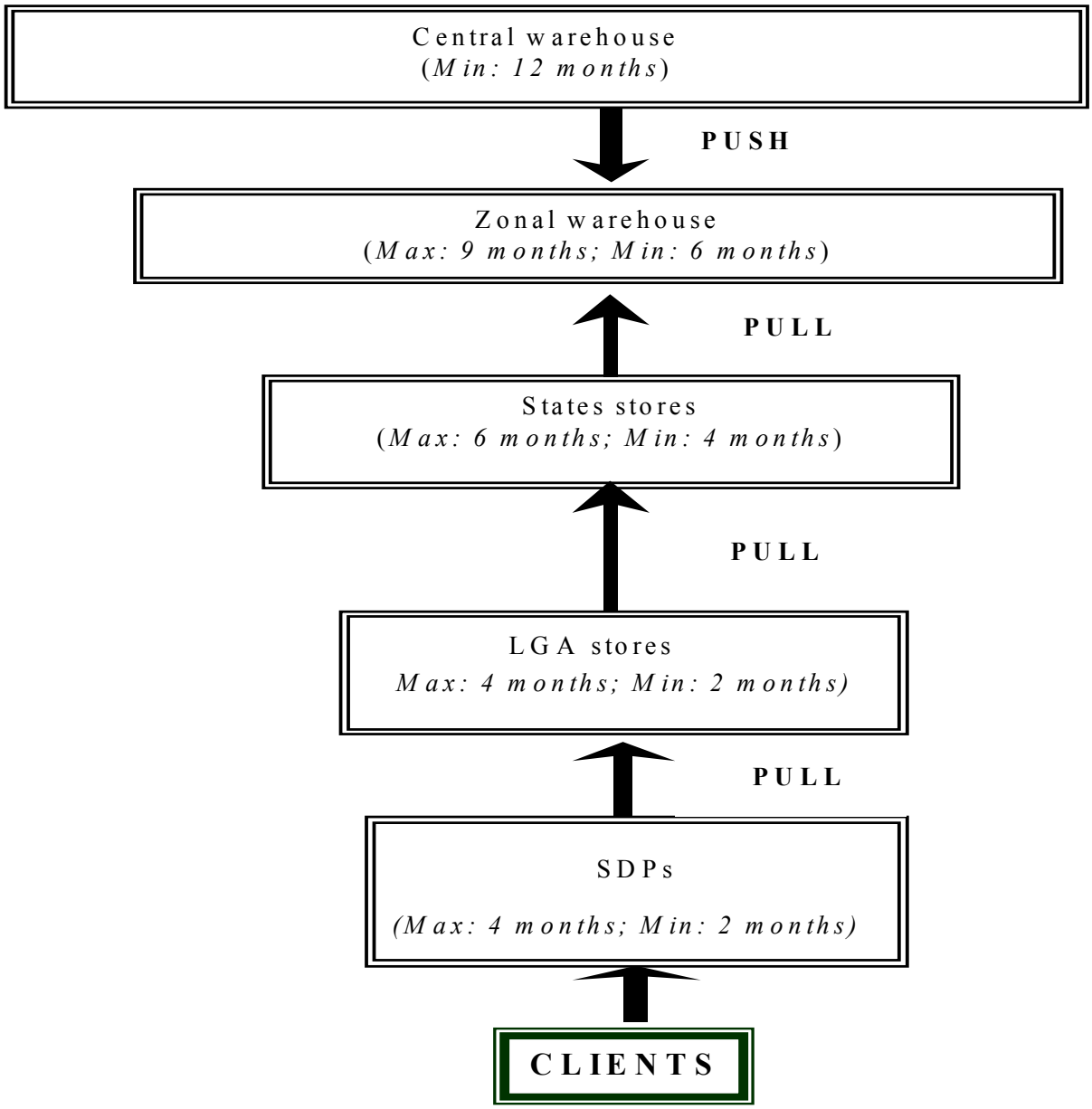


Figure 6 shows that only 0-15 percent of lower level warehouses and stores maintained stock between the established minimum and maximum levels. A third of the facilities had overstocks of Duofem and Gold circle condoms. Only those facilities that had adequate records with consumption data were included in the analyses below, so it is likely that among all facilities, the percentage that are adequately stocked is even lower. The central warehouse was stocked with all methods except Noristerat and Exluton**.** Because of a lack of issues data, however, it was not possible to calculate whether stock levels there were above the established minimum levels.

Figure 6. Contraceptive Stock Levels at Warehouses/Stores

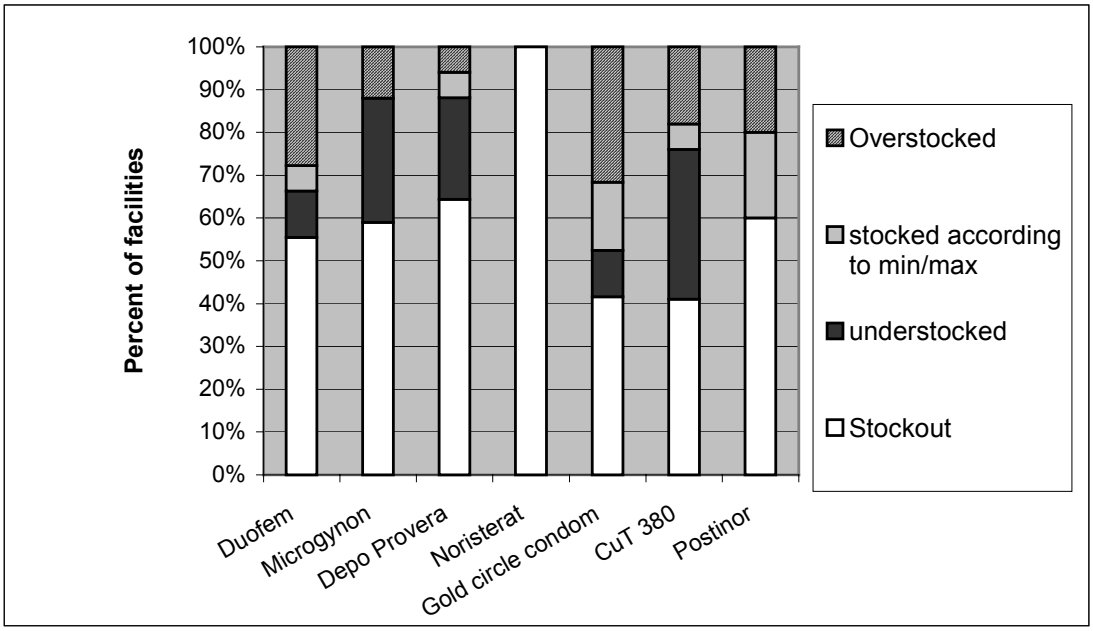
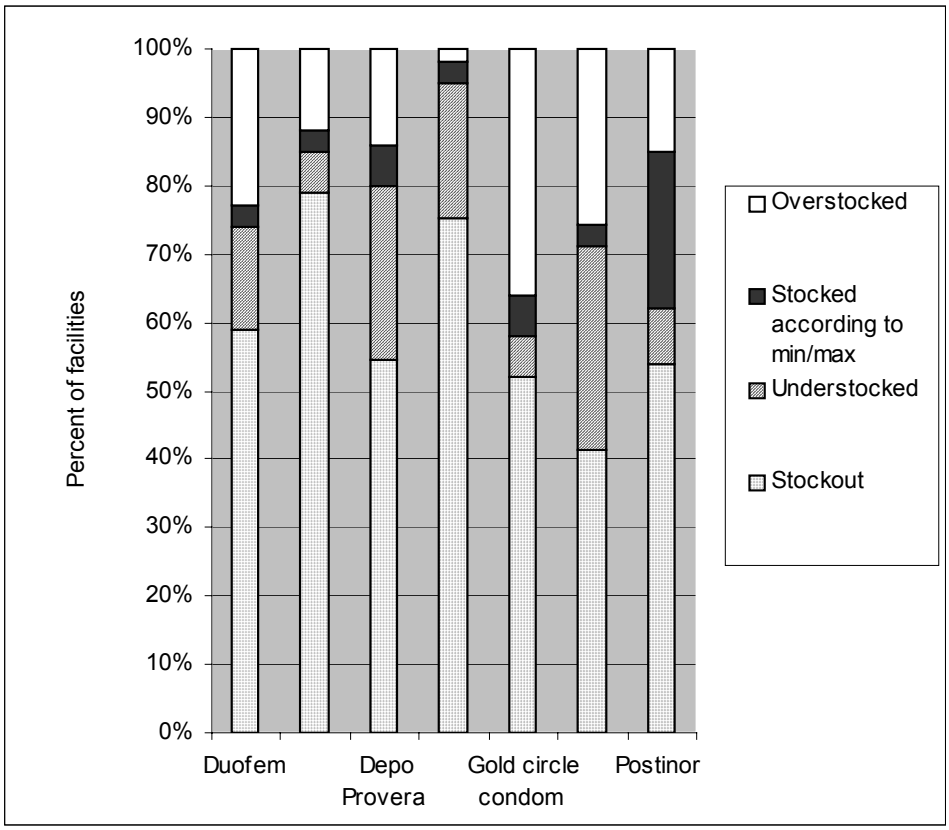


Figure 7 shows a similar pattern of stock status at the SDP levels, with about 30 percent of SDPs overstocked with Duofem and Gold Circle condoms, and 20 percent overstocked with IUDs and Postinor II. Only a very small percentage (3-5 percent) of SDPs kept their stock between the min/max levels for most methods, with the exception of Gold Circle condoms and Postinor II, which were within min/max levels at about 20 percent of sites. The main results of interest is that even among those sites with methods available, very few had appropriate amounts of stock to prevent stockouts in the near future or expirations further down the road.

Figure 7: Stock Levels of Selected Contraceptives at SDPs



A summary of the strengths and weaknesses of the inventory control management system identified in the LSAT workshop are shown in the box below. Note that participants believed that one of the "strengths" was that inventory is generally managed by FEFO. In practice, however, less than 50% of the facilities were following this procedure (discussed later, under storage conditions).

Box 2. LSAT Workshop Analysis: Inventory Control

Strengths	Weaknesses
♦ Existing system should work with modest adjustments if actually implemented—not starting from scratch. ♦ FEFO is generally followed (this was believed by the LSAT participants but found not to be there in practice)	♦ Lack of implementation due to: lack of funds for products, lack of transport, lack of capacity to complete forms and manage stock and lack of supervision ♦ Uncertain how system would respond if operating under full supply.

4.4.4 Transport and Distribution

The government allocates, in a common pool for the entire Ministry of Health, funds for vehicles, fuel and vehicle maintenance. DCDPA, at the central level, has no official vehicles with the capacity for transporting commodities. In the recent past, central to zonal distribution has been handled through contracts supported by donors. The lack of a steady source of funding for transporting commodities from the central warehouse has resulted in the delivery of commodities close to their expiry date in recent years (2000-2001). The same problem was found at zonal warehouses. Solving the funding problem for transport was mentioned by the LSAT group as a high priority to reduce stockouts at the lower levels and expirations.

Box 3. LSAT Workshop Analysis: Transportation and Distribution

Strengths	Weaknesses
None mentioned	♦ Lack of funds (central level-lack of vehicles; lower levels-cost recovery not uniform, no guidelines) ♦ Lack of vehicles at the central and other levels ♦ Lack of clarity about where vehicles should be based (what levels) ♦ Lack of guidelines for distribution/redistribution of stock

At the state level, stores pay for transportation to pick up contraceptives using the funds they retain from selling contraceptives to the lower levels and in turn service delivery points use revenue generated by selling contraceptives to clients for replenishing their stocks and transportation, among other purposes. However, as the cost recovery system is inconsistently applied (more details later), states and service delivery points often have no funds for transport to pick up contraceptives. The majority of staff at service delivery points (92%) currently use public transportation, a rented vehicle, a personal vehicle or going on foot to pick up contraceptives from the higher level facilities. Facility-managed vehicles are rare.